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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			GUILL, RUSSELL L	
			ART UNIT	PAPER NUMBER
			2123	

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/022,505

Applicant(s)

JACOBSZ, COENRAAD J.

Examiner

Russell L. Guill

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 14 is/are rejected.
- 7) ☒ Claim(s) 4 - 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date April 7, 2004
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1 – 14 have been examined. Claims 1 – 14 have been rejected.

Claim Objections

2. Claims 4 and 5 objected to because of the following informalities: Both claims contain the phrase “at least one the hierarchical” that appears to be a grammatical error. Appropriate correction is required.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claim 11 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claim appears to be directed to a computer program which descriptive material only. The claim can be made statutory by modifying it to “computer readable media on which is recorded instructions that cause a processor to execute”.

5. Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter

pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 7, 8, 9, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over IBMTechnicalDisclosure (IBM Technical Disclosure, "Multiple Control Unit/Device Emulator for Testing Computer Programs", September 1971), in view of Simon (U.S. Patent Number 6,344,901), further in view of Comer (U.S. Patent Number 6,081,856, June 27, 2000), further in view of Fromherz (U.S. Patent Number 5,835,688), further in view of McConnell (McConnell, Steve; "Code Complete", 1993, Microsoft Press), further in view of Tanenbaum (Tanenbaum, Andrew S.; "Computer Networks", 1988, Prentice-Hall).

7.1. The art of IBMTechnicalDisclosure is directed toward emulating the operation of a peripheral device of a computer in order to test the host computer program (page 1212, first paragraph).

7.2. The art of Simon is directed to a method of printing using a rasterizer and a print engine (Title).

7.3. The art of Comer is directed to emulating the operation of a peripheral device of a computer (Title).

7.4. The art of McConnell is directed to software construction (Title page).

7.5. The art of Fromherz is directed to generating finite state machines for driving a print engine (Abstract).

7.6. The art of Tannenbaum is directed to communication between computer s on a communication network (Title).

7.7. IBMTechnicalDisclosure appears to teach emulating a peripheral device using a computer for the purpose of testing a host computer program (page 1212, first paragraph).

7.8. IBMTechnicalDisclosure does not specifically teach a printer simulator.

7.9. IBMTechnicalDisclosure does not specifically teach interpreter means for interpreting a communication from the print controller into hierarchical communication elements.

7.10. IBMTechnicalDisclosure does not specifically teach a state machine representation of the print engine, said state machine being responsive to the communication.

7.11. IBMTechnicalDisclosure does not specifically teach display means adapted to display at least one of the communication from the print controller, the hierarchical communication elements, and an associated communication from the state machine.

7.12. Comer appears to teach simulating a printer peripheral (column 2, lines 17 - 35).

7.13. Comer appears to teach a memory for storing a program, and a processor for executing a program (column 1, lines 10 - 33).

7.14. Simon appears to teach an interpreter means for interpreting a communication from the print controller (column 4, lines 32 - 36).

7.15. Tanenbaum appears to teach hierarchical communication elements (page 20, figure 1-8).

7.16. Fromherz appears to teach a state machine representation of the print engine, said state machine being responsive to the communication (Abstract).

Art Unit: 2123

7.16.1. Regarding (**Abstract**); it would have been obvious that the print engine simulation is responsive to the communications from the host computer.

7.17. McConnell appears to teach display means adapted to display at least one of the communication from the print controller, the hierarchical communication elements, and an associated communication from the state machine (**page 645, section labeled “Debugger”, especially the third paragraph of the section**).

7.17.1. Regarding (**page 645, section labeled “Debugger”, especially the third paragraph of the section**); since a debugger allowed display of all data, it would have been obvious to display at least one of the communication from the print controller, the hierarchical communication elements, and an associated communication from the state machine.

7.18. The art of Comer and the art of IBMTechnicalDisclosure are analogous art because they both contain the problem of emulating a peripheral device (**Comer, Title**).

7.19. The art of Simon and the art of IBMTechnicalDisclosure are analogous art because they both are directed to the problem of a peripheral device interfacing to a host computer (**Simon, figure 1**).

7.20. The art of Fromherz and the art of IBMTechnicalDisclosure are analogous art because they both contain the problem of developing software for a computer peripheral device (**Fromherz, column 1, lines 27 – 43**).

7.21. The art of McConnell and the art of IBMTechnicalDisclosure are analogous art because they both contain the problem of developing software (**McConnell, title page**).

7.22. The art of Tanenbaum and the art of IBMTechnicalDisclosure are analogous art because they both contain the problem of computer communications

(IBMTechnicalDisclosure, page 1212, second paragraph, especially “. . . the emulator must have a plurality of channels to communicate with the CPU to . . .”).

7.23. The motivation to use the art of Comer with the art of IBMTechnicalDisclosure is that an ordinary artisan at the time of invention that needed to test a program for a printer that did not exist yet (**IBMTechnicalDisclosure, page 1212, first paragraph, last sentence**) would have had the solution provided by Comer.

7.24. The motivation to use the art of Simon with the art of IBMTechnicalDisclosure is that Simon provided a method for improved printer capabilities without degrading performance to undesirable levels (**column 3, lines 6 - 11**).

7.25. The motivation to use the art of Fromherz with the art of IBMTechnicalDisclosure is that the art of Fromherz provided enhanced usability and configurability (**column 2, lines 5 - 10**).

7.26. The motivation to use the art of Tanenbaum with the art of IBMTechnicalDisclosure is that the method of Tanenbaum reduces design complexity by using highly structured layers (**page 9, section 1.3**).

7.27. The motivation to use the art of McConnell with the art of IBMTechnicalDisclosure is that the art McConnell provided improved efficiency of debugging a program because full examination of the data is available (**page 645, section labeled “Debugger”**).

7.28. Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use the art of Comer, Simon, Fromherz, Tanenbaum and McConnell with the art of IBMTechnicalDisclosure to produce the claimed inventions.

- 8.** Claims 2 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over IBMTechnicalDisclosure (IBM Technical Disclosure, “Multiple Control Unit/Device

Emulator for Testing Computer Programs”, September 1971), and Simon (U.S. Patent Number 6,344,901), and Comer (U.S. Patent Number 6,081,856, June 27, 2000), and Fromherz (U.S. Patent Number 5,835,688), and McConnell (McConnell, Steve; “Code Complete”, 1993, Microsoft Press), and Tanenbaum (Tanenbaum, Andrew S.; “Computer Networks”, 1988, Prentice-Hall).

8.1. IBMTechnicalDisclosure does not specifically teach that the communication from the print controller comprises a sequence of data link layer packets.

8.2. IBMTechnicalDisclosure does not specifically teach that the hierarchical communication elements comprise at least one of:

8.2.1. Said link layer packets;

8.2.2. A header associated with the link layer packets;

8.2.3. A checksum associated with the link layer packets;

8.2.4. An application layer packet formed from said link layer packets;

8.2.5. A print engine command associated with the application layer packet;

8.2.6. Arguments associated with the print engine command.

8.3. IBMTechnicalDisclosure does not specifically teach code for interpreting the preceding elements of hierarchical communication elements.

8.4. Tanenbaum appears to teach communication from the print controller comprises a sequence of data link layer packets (page 20, figure 1-8).

8.5. Tanenbaum appears to teach that the hierarchical communication elements (page 20, figure 1-8) comprise at least one of:

Art Unit: 2123

8.5.1. Said link layer packets (page 20, figure 1-8);

8.5.2. A header associated with the link layer packets (page 20, figure 1-8);

8.5.3. A checksum associated with the link layer packets (Chapter 4 "The Data Link Layer", section 4.2.2 Error-Detecting Codes, page 209, the paragraph that starts with "When the polynomial . . . ");

8.5.4. An application layer packet formed from said link layer packets (page 20, figure 1-8);

8.5.5. A print engine command associated with the application layer packet (page 552, figure 9-13, command s);

8.5.6. Arguments associated with the print engine command (page 552, figure 9-13, command s).

8.6. Therefore, as discussed above, it would have been obvious to the ordinary artisan at the time of invention to use the art of Tanenbaum with the art of IBMTechnicalDisclosure to produce the claimed inventions.

9. Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over IBMTechnicalDisclosure (IBM Technical Disclosure, "Multiple Control Unit/Device Emulator for Testing Computer Programs", September 1971), and Simon (U.S. Patent Number 6,344,901), and Comer (U.S. Patent Number 6,081,856, June 27, 2000), and Fromherz (U.S. Patent Number 5,835,688), and McConnell (McConnell, Steve; "Code Complete", 1993, Microsoft Press), and Tanenbaum (Tanenbaum, Andrew S.; "Computer Networks", 1988, Prentice-Hall).

9.1. Claim 3 is a dependent claim of claim 1, and thereby inherits all of the limitations of claim 1.

9.2. Claim 13 is a dependent claim of claim 11, and thereby inherits all of the limitations of claim 11.

9.3. IBMTechnicalDisclosure does not specifically teach a first plurality of print engine states each being able to assume one or more state values;

9.4. IBMTechnicalDisclosure does not specifically teach a second plurality of state transitions and associated time delays, wherein the communication from the state machine being in response to the communications from the print controller is dependent upon at least one of:

9.4.1. Values of the first plurality of print engine states prior to the print engine simulator receiving the communication from the print controller;

9.4.2. Said communication from the print controller;

9.4.3. expiry of a time period;

9.5. Tanenbaum appears to teach a first plurality of print engine states each being able to assume one or more state values (pages 245 - 250, section 4.6.1 Finite State Machine Models; and page 247, figure 4-20).

9.6. Tanenbaum appears to teach a second plurality of state transitions and associated time delays (page 247, figure 4-20; in section (b) of the figure, please note the timeout associated with transition 7; and page 250, figure 4-22), wherein the communication from the state machine being in response to the communications from the print controller is dependent upon at least one of:

9.6.1. Values of the first plurality of print engine states prior to the print engine simulator receiving the communication from the print controller (page 247, figure 4-20);

9.6.2. Said communication from the print controller (page 247, figure 4-20; and page 250, figure 4-22);

9.6.3. expiry of a time period (page 247, figure 4-20; in section (b) of the figure, please note the timeout associated with transition 7; and page 250, figure 4-22);

10. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over

IBMTechnicalDisclosure (IBM Technical Disclosure, "Multiple Control Unit/Device Emulator for Testing Computer Programs", September 1971), and Simon (U.S. Patent Number 6,344,901), and Comer (U.S. Patent Number 6,081,856, June 27, 2000), and Fromherz (U.S. Patent Number 5,835,688), and McConnell (McConnell, Steve; "Code Complete", 1993, Microsoft Press), and Tanenbaum (Tanenbaum, Andrew S.; "Computer Networks", 1988, Prentice-Hall).

10.1. Claim 4 is a dependent claim of claim 2, and thereby inherits all of the rejected limitations of claim 2.

10.2. IBMTechnicalDisclosure does not specifically teach a display means adapted to display at least one the hierarchical communication elements.

10.3. McConnell appears to teach a display means adapted to display at least one the hierarchical communication elements (page 645, section labeled "Debugger", especially the third paragraph of the section).

10.3.1. Regarding (page 645, section labeled “Debugger”, especially the third paragraph of the section); since a debugger allowed display of all data, it would have been obvious to display at least one of the hierarchical communication elements.

11. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over

IBMTechnicalDisclosure (IBM Technical Disclosure, “Multiple Control Unit/Device Emulator for Testing Computer Programs”, September 1971), and Simon (U.S. Patent Number 6,344,901), and Comer (U.S. Patent Number 6,081,856, June 27, 2000), and Fromherz (U.S. Patent Number 5,835,688), and McConnell (McConnell, Steve; “Code Complete”, 1993, Microsoft Press), and Tanenbaum (Tanenbaum, Andrew S.; “Computer Networks”, 1988, Prentice-Hall), in view of Stewart (U.S. Patent Number 6,111,886), further in view of common knowledge in the art.

11.1. Claim 5 is a dependent claim of claim 2, and thereby inherits all of the rejected limitations of claim 2.

11.2. The art of Stewart is directed to a method for communicating between devices interconnected on a bus (Title).

11.3. IBMTechnicalDisclosure does not specifically teach a display means of a non-scrolling display area for displaying statistical information relating to the at least one the hierarchical communication elements.

11.4. IBMTechnicalDisclosure does not specifically teach a display means of a scrolling display area for dynamically displaying the communication from the print controller.

11.5. Official Notice is taken that it was old and well known in the art at the time of invention to have dynamic scrolling and non-scrolling display areas. The motivation for using a scrolling display area would have been to display debugging data that continuously

appends data to itself. The motivation to use a non-scrolling display area would have been to display data fields that are static locations in memory.

11.6. McConnell appears to teach displaying the communication from the print controller (page 645, section Debugging).

11.6.1. Regarding (page 645, section Debugging); since McConnell teaches that all debuggers allow examination of all data, it would have been obvious to display displaying the communication from the print controller.

11.7. Stewart appears to teach displaying statistical information relating to the at least one the hierarchical communication elements (column 6, lines 61 - 67).

11.8. The art of IBMTechnicalDisclosure and the art of Stewart are analogous art because they both contain the problem of communicating between computers across a channel (IBMTechnicalDisclosure, page 1212, second paragraph) and (Stewart, figure 2).

11.9. The motivation to use the art of Stewart with the art of IBMTechnicalDisclosure would have been to determine whether there was a communications bottleneck between the devices that was reducing performance so that more bandwidth could be designed into the channel (Stewart, column 6, lines 60 - 67).

11.10. Therefore, as discussed above it would have been obvious to the ordinary artisan at the time of invention to use the art of Stewart and common knowledge with the art of IBMTechnicalDisclosure to produce the claimed invention.

12. Claims 6 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over IBMTechnicalDisclosure (IBM Technical Disclosure, "Multiple Control Unit/Device Emulator for Testing Computer Programs", September 1971), and Simon (U.S. Patent Number 6,344,901), and Comer (U.S. Patent Number 6,081,856, June 27, 2000), and

Fromherz (U.S. Patent Number 5,835,688), and McConnell (McConnell, Steve; "Code Complete", 1993, Microsoft Press), and Tanenbaum (Tanenbaum, Andrew S.; "Computer Networks", 1988, Prentice-Hall).

12.1. Claim 6 is a dependent claim of claim 2, and thereby inherits all of the rejected limitations of claim 2.

12.2. Claim 14 is a dependent claim of claim 12, and thereby inherits all of the rejected limitations of claim 12.

12.3. IBM Technical Disclosure does not specifically teach error detection means for detecting an illegal condition in at least one of said hierarchical communication elements.

12.4. IBM Technical Disclosure does not specifically teach error display means for presenting the detected illegal condition on the display means.

12.5. IBM Technical Disclosure does not specifically teach reset means for resetting said state machine representation of the print engine.

12.6. Tanenbaum appears to teach error detection means for detecting an illegal condition in at least one of said hierarchical communication elements (pages 208 – 209, section 4.2.2 Error-Detecting Codes).

12.7. Tanenbaum appears to teach reset means for resetting a state machine representation (page 247, last paragraph, especially the two sentences starting with "If the channel loses frame . . .")

12.8. McConnell appears to teach error display means for presenting the detected illegal condition on the display means (page 645, section Debugger).

Conclusion

- 13.** Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russell L. Guill whose telephone number is 571-272-7955. The examiner can normally be reached on Monday – Friday 9:00 AM – 5:30 PM.
- 14.** If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska can be reached on 571-272-3716. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Any inquiry of a general nature or relating to the status of this application should be directed to the TC2100 Group Receptionist: 571-272-2100.
- 15.** Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**SAMUEL BRODA, ESQ.
PRIMARY EXAMINER**

RG